



UNITED STATES NAVY

# MEDICAL NEWS LETTER

Editor - Captain L. B. Marshall, MC, USN (RET)

Vol. 28

Friday, 20 July 1956

No. 2

## TABLE OF CONTENTS

Treatment of Barbiturate Poisoning .....	2
Amphetamine-Resin Complex for Prolonged Appetite Suppression .....	5
Treatment of Gout .....	7
Results of Prolonged Treatment with Pentolinium Tartrate .....	9
Blood Loss in Oral Surgery .....	10
Radiation Exposure During Oral Roentgenography .....	12
Hypothermia and Hypotension for Major Pelvic Surgical Procedures.....	14
Primary Hepatoma in Infants and Children .....	15
Safety of Curare in Anesthesia .....	17
Inadequate Screening of Submarine Applicants .....	18
Postgraduate Short Courses for Medical Officers .....	20
From the Note Book .....	21
Office of Naval Research - Tenth Anniversary .....	23
Board Certifications .....	23
Recent Research Projects .....	26
Decedent Affairs Program (BuMed Inst. 5360.10B) .....	27
Poliomyelitis Vaccine, Extension of Use (BuMed Inst. 6230.8 Sup-2) ....	28
Venereal Disease, Prevention of (BuMed Inst. 6222.3B Sup-1).....	28
Defective Medical and Dental Material (BuMed Inst. 6710.31) .....	28

### DENTAL SECTION

Graduation of Officers..... 29	Instructions and Notices .....	30
Technical Graduates from B and C Schools .....		30

### MEDICAL RESERVE SECTION

New Requirements for Promotion (concluded) .....	31
--	----

### PREVENTIVE MEDICINE SECTION

Poliomyelitis Vaccine.....	33	Industrial Health Data Sheet....	37
Vector and Pest Prevention.....	33	Occupational Health Hazards ...	37
Kerosene-Based Insecticides.....	35	Intestinal Infections .....	38
Occupational Medicine .....	35	Outbreak of Amebiasis .....	38
Preventive Medicine Manual .....	36	Health Program, C.S. Employees	39
Uniform Civilian Medical Jackets .....	40		

### Policy

The U. S. Navy Medical News Letter is basically an official Medical Department publication inviting the attention of officers of the Medical Department of the Regular Navy and Naval Reserve to timely up-to-date items of official and professional interest relative to medicine, dentistry, and allied sciences. The amount of information used is only that necessary to inform adequately officers of the Medical Department of the existence and source of such information. The items used are neither intended to be nor are they susceptible to use by any officer as a substitute for any item or article in its original form. All readers of the News Letter are urged to obtain the original of those items of particular interest to the individual.

\* \* \* \* \*

### Notice

Due to the shortage of medical officers, the Chief, Bureau of Medicine and Surgery, has recommended, and the Chief of Naval Personnel has concurred, that Reserve Medical officers now on active duty who desire to submit requests for extension of active duty at their present stations for a period of three months or more will be given favorable consideration. BuPers Instruction 1926.1B applies.

\* \* \* \* \*

### Treatment of Barbiturate Poisoning

Three times during the past twenty years the Council on Pharmacy and Chemistry of the American Medical Association has deemed it of sufficient importance to report on the use of analeptic drugs in the treatment of barbiturate poisoning. On all three occasions the lack of clinical proof of the effectiveness of analeptics was stressed. Since the last report, additional evidence concerning the treatment of barbiturate poisoning has appeared. This presentation summarizes and evaluates such evidence. It is shown that mortality from barbiturate poisoning treated by supportive therapy alone is strikingly low. It is apparent that metrazol, picrotoxin, and other analeptics do not increase the survival rate from barbiturate narcosis. The data imply that analeptics may even increase the death rate.

The principles of supportive therapy are outlined as follows:

Respiration. A patent airway must be maintained by prevention of soft tissue obstruction and meticulous removal of secretions from the pharynx and tracheobronchial tree. When pharyngeal and laryngeal reflexes are diminished or absent, the trachea should be intubated with an endotracheal tube (No. 35 French in adults, and smaller as indicated). This facilitates aeration and



removal of secretions; a catheter for aspirating secretions should be passed through the endotracheal tube at least every hour and the tube changed every 12 hours. The tube is removed when pharyngeal and tracheal reflexes and muscular tone return. Vocal cord granulomas may occur following prolonged tracheal intubation; therefore, tracheotomy should be considered if intubation is required longer than 3 days.

Respiratory tidal exchange and minute volume must be adequate. The tidal exchange should exceed 350 cc. This can be estimated by careful observation or can actually be measured. Apnea, shallow respiration, dusky skin of the skin, finger nails, and lips, or hypercapnia as shown by the  $\text{CO}_2$  blood content indicate the need for artificial respiration. A mechanical resuscitator, Drinker respirator, or manual rhythmic compression of an anesthetic bag filled with oxygen will suffice for this purpose. During coma from any cause, oxygen should be administered by mask or by a nasopharyngeal catheter delivering a flow of 6 L. per minute. If an endotracheal tube has been inserted, the flow should be 4 L. per minute.

To facilitate pulmonary ventilation and the drainage of secretions from the trachea and pharynx, the lateral decubitus position is optimal, with the head slightly lower than the feet. The patient should be turned hourly. Lowering the head end of the bed more than 5 degrees may interfere with respiratory exchange through elevation of the diaphragm.

Circulation. Once adequate pulmonary ventilation is established, attention should be turned toward the circulation. An intravenous infusion of 5% glucose in water should be started and continued during the course of treatment; 2500 cc. of glucose in water and 500 cc. of 5% glucose in physiologic salt solution should be administered every 24 hours. If shock is apparent, plasma expander or whole blood may be indicated. The blood pressure should be maintained within the physiologic limits for the patient by the use of vasopressor drugs. A continuous infusion of 10 mg. of neo-syneprine in 1 L. of 5% glucose is advisable if a single intramuscular injection of 2 to 3 mg. of the same drug has not satisfactorily maintained the blood pressure. If a more potent vasopressor is required, L-nor-epinephrine (4 mg. /L, of 5% glucose solution) is indicated. Neo-syneprine should be tried first because of the evanescent effect and the danger of local tissue necrosis following administration of L-nor-epinephrine. Both require careful titration and observation.

Gastric Lavage. Considerable quantities of unabsorbed narcotic may remain in the stomach for many hours. These can be removed by passage of a large-bore Levin tube with careful aspiration of the gastric contents, using 10 to 20 cc. amounts of physiologic salt solution for aspirating fluid. Regurgitation of stomach contents or aspirating fluids must be anticipated. In deep coma, it is best to prevent aspiration of gastric contents by passage of a cuffed endotracheal tube during the period of gastric lavage. The gastric fluid removed may be analyzed for barbiturate or other suspected narcotic.

Catheterization of the Urinary Bladder. Urinary bladder distention should be guarded against by the insertion of an indwelling catheter or intermittent catheterization. This also permits better appraisal of urinary output.

Prevention of Infection. Antibiotics should be injected prophylactically soon after therapy is instituted. This will minimize pulmonary and other infections.

Damage to the Eyes and Lips. Care should be exercised to prevent this. The eyes may be taped shut. The lips should be lubricated to prevent drying and cracking. Attention must be paid to oral hygiene.

Most of the proponents of analeptic therapy stress that good supportive treatment is required in addition to analeptics.

Data are available to indicate that there are dangers associated with the use of stimulant drugs. The following complications may be anticipated: convulsions, vomiting with aspiration of gastric contents, and cardiac arrhythmias.

For some reason, many physicians confronted with patients suffering from suspected barbiturate poisoning immediately think of analeptics. These drugs are, therefore, often instituted in the first part of the treatment rather than the last.

It is agreed that comparison of treatment in one series of poisoned patients versus another series is difficult. The lack of standardization of basic treatment discussed is one of the reasons. A second is the inadequacy of criteria for classification of the severity of poisoning. Each author has established his own criteria which often contradict those of others. A detailed classification on the basis of clinical appearance is helpful, but the following tests might be informative: (1) response to inhalation of 10% carbon dioxide (failure to observe hyperpnea suggests a poorly functioning respiratory center); (2) response to inhalation of 100% oxygen (seeking oxygen apnea); (3) response to the intravenous injection of a test dose of 10% metrazol (for example, 4 to 5 cc.); (4) electroencephalographic tracing; and, (5) blood barbiturate levels.

Barbiturate poisoning with longer-acting barbiturates such as barbital and phenobarbital may be associated with a higher mortality than that with the shorter acting barbiturates more commonly seen today. Thus, it is even more difficult to compare old and new data.

The majority of patients with overdoses of barbiturates are in the middle age group or older, either mentally or physically ill, possibly addicted to alcohol or other drugs, and in various states of nutrition. The time factor between the ingestion of drug and onset of treatment may vary, as may intervening periods of anoxia. Finally, factors that facilitate a rapidly rising blood level of ingested drugs may exist. A dose-weight relationship is applicable only to a specific set of conditions. Under the variety of circumstances listed for man, comparison of results of treatment based on such a relationship is not likely to result in significant conclusions.

The authors agree with the statement by Koppanyi and Fazekas that Nilsson has not excluded the possible usefulness of analeptic drugs in the



severely poisoned patient who has received good supportive therapy. The available data suggest that analeptics are valueless and even harmful, but for the patient in deep coma unresponsive to supportive therapy, the data are not conclusive. However, the evidence clearly indicates that analeptics have no part in the treatment of other than severely poisoned patients. Because the majority of patients encountered with barbiturate narcosis do not fall into the severely poisoned group, it follows that treatment with stimulant drugs should be the exception and not the rule.

On the basis of available evidence, supportive therapy alone is the method of choice in treating barbiturate poisoning. Analeptics appear to be without value and may even increase the hazard of narcosis by causing convulsions, cardiac irregularities, and vomiting. The general problem is similar to that of treating a postanesthetic comatose patient and it is suggested that a physician anesthetist participate in the treatment of all cases of narcotic poisoning. The complicating factor of cerebral anoxia is discussed. If anoxia has been a prominent part of the patient's clinical course, analeptics are contraindicated. (Eckenhoff, J.E., Dam, W., The Treatment of Barbiturate Poisoning with or without Analeptics: Am. J. Med., XX: 912-917, June 1956)

\* \* \* \* \*

#### Amphetamine-Resin Complex for Prolonged Appetite Suppression

There has been an increasing acceptance of therapeutic preparations designed to produce a prolonged effect after oral (or parenteral) administration. The long-acting oral preparations have the advantage of convenience and a more uniform and consistent action. This is especially desirable for drugs used to suppress appetite in the treatment of obesity.

Most long-acting appetite suppression products now available depend upon the principle of the dissolution of variously sized, enteric-coated granules making their respective drug loads available at different times. Experience has proved that such a means of delaying the release of drugs varies considerably from individual to individual, and from hour to hour in the same individual, depending mainly upon the activity of the digestive fluids of the gastrointestinal tract. In order to overcome this disadvantage, a totally new approach to the sustained release of drugs has been developed.

Anion and cation exchange resins form reversible complexes with organic acids and bases. The dissociation of these complexes proceeds at a finite rate. If the proper ion exchange resin with properties appropriate for the drug under consideration is chosen, this rate of dissociation can be controlled to produce a uniform release of the therapeutic agent. This is solely dependent upon the availability of ions. Because the total concentration of ions in the gastrointestinal fluids varies within relatively narrow limits, the

rate of the exchange of ions for the drug is relatively constant. Biphetamine is a resin-amphetamine complex having such properties.

In this experiment, patients were utilized who were already on amphetamine therapy for suppression of appetite in order to produce weight reduction. These patients were losing rather unsatisfactorily, that is, they had failed to make appreciable progress over a period of 4 to 6 weeks, and some actually were gaining weight. Many had complained that the appetite suppression was not so effective as at the beginning of therapy. The patients had been receiving routinely 10 mg. of a combination of 1 to 3 levo-amphetamine to dextro-amphetamine sulfate three times daily.

The patients were then instructed to take one capsule of the Biphetamine (amphetamine-resin complex) at breakfast time, instead of the tablet preparation. The directions were so given as to reduce the possibility of the influence of suggestion, i. e., as casually as possible and without any promise that the patient would do better on the newer medication. In this way, 31 patients were given capsules of Biphetamine containing 12.5 mg. of amphetamine, 56 patients were administered similar appearing capsules containing 15 mg. of amphetamine, and 104 patients were administered such capsules containing 20 mg. of amphetamine. After 3 to 4 weeks on the above therapy, the patient's response to the medication was evaluated as objectively as possible.

As indicated by table, the capsule containing 12.5 mg. amphetamine showed satisfactory results in about 60% of the cases, but with increase of the potency of the capsule there was a progressively greater degree of appetite suppression. Thus, at the 20 mg. level about 90% of the patients reported satisfactory or excellent effects. It should be realized that these patients were already fairly well tolerated to amphetamine therapy in general. Therefore, the reports of the patients that their appetites were suppressed in an excellent manner indicate that the Biphetamine capsules were considerably more effective in curbing appetite than the tablets of amphetamine they had taken previously. About 80% of the patients reported satisfactory curbing of appetite for 10 to 14 hours; approximately 10% claimed that their appetite returned after about 9 hours or less, and only approximately 10% mentioned some difficulty in falling asleep, indicating the possibility of an action longer than 14 hours.

As to side reactions, the usual untoward responses commonly associated with amphetamine therapy were encountered. These included, to a mild degree, insomnia, dryness of the mouth, nervousness, and exhilaration.

A chart is presented which indicates a considerable increase in weight loss in most of the patients receiving the Biphetamine capsule medication; also, over 70% of the patients taking Biphetamine lost 3 to 4 pounds and more in the 3-week interval in contrast to about 85% of the patients previously on amphetamine tablets who lost less than 3 to 4 pounds during 3 weeks of therapy.

In addition to the superior effect of the Biphetamine, this single dosage form of medication was more convenient than tablet therapy. It avoided the



accidental failure to take a tablet or the unconscious avoidance of it. However, most patients will take a capsule in the morning, because their intentions are usually good at this time and, thereafter, they are released from the responsibility or the need to take further medication. In addition, the therapeutic effect is smoother because of the elimination of the sharp rises and declines in blood levels, and it is, thus, more effective in alleviating hunger. (Freed, S. C., et al., Amphetamine-Resin Complex for Prolonged Appetite Suppression: *Ann. Int. Med.*, 44: 1136-1141, June 1956)

\* \* \* \* \*

### Treatment of Gout

Few illnesses follow such a set clinical pattern as does classical gout. Hench has described two stages—that characterized by recurrent episodes of acute joint inflammation followed by complete, but temporary, remissions (intercritical periods), and that of chronic gouty arthritis, or tophaceous gout. Because asymptomatic hyperuricemia (larval gout) precedes for some time attacks of acute joint symptoms, it is proposed that this part of the total disease be designated as the first stage of gout. For the purpose of this presentation, the natural course of the disease will be considered in three parts: Stage I, asymptomatic hyperuricemia; Stage II, acute intermittent gouty arthritis; and Stage III, chronic gouty arthritis.

Recent studies indicate that gout is a familial disease transmitted from parent to child and it is impossible to prevent its occurrence; however, the relatives of known patients with gout who have hyperuricemia without symptoms should be informed that they are potential gout victims. These persons predisposed by hereditary hyperuricemia may or may not develop joint symptoms and are advised to avoid obesity, excessive trauma of joints, or excessive high-purine foods, all known provocatives of acute gouty arthritis. At present, the use of uricosuric agents in this prearthritic stage is not recommended.

The problems of treatment in the second stage of gout can be divided into two parts: first, the management of the acute bouts of severe joint inflammation, and second, preventive measures employed in the intervals between the acute attacks of arthritis of gout.

The use of local rest by protecting the part with splints and a cradle and narcotics for pain are useful aids in the control of pain in the first hours of an attack before the specific drugs become effective. The effectiveness of drug therapy is enhanced by bed rest.

Oral Colchicine. This alkaloid of the meadow saffron continues to be the drug of choice in handling the acute attack by the majority of authorities. Its oral use has been proved to be a dependable, safe, and almost uniformly effective therapy, and is generally accepted as the "standard" in the control of acute attacks of gouty arthritis.

Intravenous Colchicine. Recently, the use of intravenous colchicine has been reported favorably by several careful investigators. Those who have used the intravenous route have found it to be safe, rapid, and effective. The major advantage of this route of administration is the absence of gastrointestinal upset, and it is especially suitable for postoperative attacks of gouty arthritis.

Demecolcine (Desacetylmethylcolchicine: Colcemid). Recent investigations have shown that demecolcine is considerably less toxic in laboratory animals than colchicine. This new alkaloid is also derived from the meadow saffron (*Colchicum autumnale*) and was first used clinically in the treatment of a variety of neoplastic diseases (chronic myeloid leukemia, lymphosarcoma, Hodgkin's disease, sarcoma, and lymphatic leukemia).

From limited experience, this new drug appears to be effective when given orally without the risk of gastrointestinal upsets. If additional studies confirm these original observations, demecolcine will have distinct advantage over colchicine. Much more clinical study needs to be done before the toxicity can be established.

Phenylbutazone. Phenylbutazone (Butazolidin) is an effective agent in the treatment of acute attacks of gouty arthritis.

Hormones. Corticotropin (ACTH) gel, cortisone, hydrocortisone, and prednisone have all been demonstrated to control acute attacks of gout.

The aim of therapy following the acute attack is the reduction of the frequency and severity of recurrences and ultimately the prevention of future episodes of acute joint symptoms, destructive changes in joints, and renal and vascular complications. Significant advances have been made during recent years in the long-term treatment. It is the responsibility of the physician to impress the patient with this illness of the necessity for faithfully adhering to a prescribed regimen throughout the remainder of his life.

It is the presence of tophi and low-grade chronic arthritis which distinguishes chronic gouty arthritis, or tophaceous gout (Stage III). Acute attacks of inflammation in joints and bursae continue and, although superimposed on the previously damaged joints, have the same signs and symptoms as those which occur repeatedly in Stage II. The aim of therapy is to control the acute symptoms of the intermittent acute flare-ups, to reduce the stiffness and the low-grade aching pains of the chronic arthritis and decrease the size of existing tophi, and to prevent the development of new tophi.

The drugs used in the management of the acute attacks in Stage III are the same as those used in Stage II, and the manner of their administration is also the same. The response to treatment of the acute bouts may not be as complete nor as dramatic as in the earlier stages. If treatment is started when the episode of acute joint distress has been present for several weeks, several courses of colchicine or continuous phenylbutazone will be required to control the symptoms.

At present, the authors' policy regarding diet is based upon the knowledge that complete control of urate formation by diet regulation is impossible, and



upon the practical difficulties of a rigorous lifetime control in persons who have been in the habit of eating a rich diet. The authors believe that these patients should omit foods high in purines, such as liver, sweetbreads, kidney, sardines, and anchovies, which is not a hardship on most persons. In addition, moderate restrictions are placed on meats, fish, seafoods, beans, peas, and lentils.

If tophi on the hands or feet become large and ulcerate, cause pain, or interfere with movement, surgical removal may be necessary. The incisions heal rapidly, and recurrences of any size are rare. (Smyth, C. J., et al., Treatment of Gout: Arch. Int. Med., 97: 783-790, June 1956)

\* \* \* \* \*

#### Results of Prolonged Treatment with Pentolinium Tartrate

Soon after pentolinium tartrate was synthesized by Libman, Pain, and Slack, pharmacologic studies by Wein and Mason indicated that it was a potent ganglionic blocking agent with a prolonged duration of action. Preliminary clinical results were reported by Campbell and Maxwell, Smirk, and from the Cardiovascular Research Laboratory, Georgetown University Hospital. These reports indicated that pentolinium tartrate was an orally effective, potent, and antihypertensive drug that appeared to be useful in the treatment of patients with more severe fixed types of hypertension. In the present report, the long-term experience with pentolinium tartrate, both alone and in combination with certain other hypotensive agents, is presented.

A series of 96 patients with severe fixed hypertension was treated with pentolinium tartrate alone or in combination with Rauwolfia or hydralazine, or both, for periods varying from 3 to 27 months (average, 12 months) with the following results:

1. Ten of the 34 patients with grade IV changes in the optic fundi and 7 of the remaining cases have died. In addition, 1 case developed a myocardial infarction and 2 developed mild cerebrovascular accidents while under treatment.
2. Typical hypertensive symptoms such as headache, dizziness, and those relating to cardiac decompensation often were relieved; whereas, those due to vascular sclerosis, such as angina or residuals of old cerebrovascular accidents, usually did not improve or were made worse.
3. Improvement in the optic fundi was observed in more than 80% of the patients with grade III and grade IV changes and in slightly less than half of the patients with grade II changes.
4. Decrease in cardiac size frequently was observed. Improvement in the electrocardiographic pattern of left ventricular hypertrophy also occurred, but less frequently than the former.

5. The degree of albuminuria usually tended to lessen during treatment. Approximately one-half of the patients with nitrogen retention showed clearing, whereas, the other half developed increased retention. The ability of the patients to excrete phenolsulfonphthalein decreased more often than it increased, following treatment. The reasons for these apparent discrepancies are discussed and it is concluded that treatment was more effective in arresting or reversing changes in the optic fundi and in the heart than in the kidneys.

6. Data are presented to demonstrate the additive effects of Rauwolfia or hydralazine, or both, to the regimen. Combining all three agents generally resulted in the greatest reduction of blood pressure with the least degree of symptoms resulting from ganglionic "blockade."

7. In view of the severity of the hypertension in the present series, it is concluded that this method of treatment is beneficial. It was especially effective in restoring semi-invalided or invalided hypertensive patients back to more useful and active modes of living.

(Freis, E.D., Wilson, I.M., Results of Prolonged Treatment with Pentalinium Tartrate - with Special Reference to the Addition of Rauwolfia, Hydralazine or Both: *Circulation*, XIII: 856-864, June 1956)

\* \* \* \* \*

### Blood Loss in Oral Surgery

The problem of clinically evaluating reduced blood volume due to whole blood loss is one that has received little attention in oral surgical practice. So far as could be ascertained from rather exhaustive perusal of the literature, no scientific report has been published on this subject, although the literature is replete with articles on blood loss in all other branches of surgery. The exclusion of exodontia and oral surgery leads one to believe that the extent of hemorrhage associated with the extraction of teeth is generally accepted as insignificant.

The quantity of blood that escapes the vascular bed during a surgical procedure depends upon the size and the number of vessels surgically interrupted and the length of time bleeding or oozing is allowed to continue. The effect of hemorrhage on the host depends upon a number of factors, mainly upon the age and general health of the patient and the proportion of blood lost in relation to his normal blood volume.

In order to measure the extent of actual blood loss in oral surgical procedures, particularly exodontia with the aid of general anesthesia, this study was undertaken. Quantitative blood losses occurring in average dental patients during multiple or complete extractions and during alveolotomy were determined. For clinical evaluation, the averages were compared with average blood losses in general surgical procedures. During the course of the investigation and subsequent analysis of the findings, it became apparent that there



may be another facet to this problem: blood loss tended to be materially affected by the surgical technique used.

In oral surgery, no less than in all types of surgery, it is important that the patient's medical history be obtained and a case "work-up" be made. Sometimes, it is not an easy matter to obtain a rather thorough medical history from dental patients who, even though hospitalized, rarely can see any connection between the oral cavity and systemic diseases. Because the patient's preoperative general condition and a history of bleeding tendency are of paramount concern to the oral surgeon, the time and effort required to educate these patients to the necessity and validity of obtaining such a history are more than worthwhile.

The fact that patients were encountered in this series who bled profusely during oral surgery despite having normal blood platelet counts, bleeding, clotting, and prothrombin times on hematologic study might be explained by tissue tone. Hyperemia or the presence of granulation tissue increases the bleeding potential.

In an attempt to ascertain whether blood loss would be materially affected by different operative techniques, blood loss was compared with the techniques employed by the eight oral surgeons represented in this study. Their extraction techniques fell into two major categories: (1) extraction followed by surgical incision and reflection of mucoperiosteal tissues, alveolotomy, curettage, and closure; and (2) surgical incision, reflection of mucoperiosteal tissues and alveolotomy, followed by extraction, curettage, and closure. Seven of the eight surgeons employed the first technique described. The one employing the second technique is represented by 9 cases, a number considered too small for statistical analysis.

Six of the seven surgeons in the first category employed a broad-field approach, operating on an entire quadrant or more before final closure was made. The remaining surgeon extracted a maximum of 3 or 4 teeth at one operation.

When the case material was studied separately on the basis of the different operative techniques, the number of patients in the higher blood loss brackets increased correspondingly as the duration of surgery increased in each category, the highest losses occurring, as would be expected, in the broad field approach of the second category. When 16 or more teeth were extracted, the average blood loss in this group was 320 ml. with an average of 19 teeth extracted and an average of 45 minutes operating time. The patients represented by the small-field approach sustained an average blood loss of 200 ml. with an average of 17 teeth extracted and an average of 27 minutes operating time. When 28 or more teeth were extracted, the median blood loss of the first group was 715 ml. while in the second group it was 290 ml., a proportionate difference that was sustained when the number of extractions was divided into 6 groups by increments of 5. The 9 patients in the second category (too few for significance) sustained an average blood loss of 188 ml. with an average of 19 teeth extracted in an operation lasting 39 minutes.

Quantitative determination of blood losses sustained in oral surgery in a series of 175 patients representing eight oral surgeons showed losses ranging from 35 to 912 ml. with an average loss of 223 ml. with extraction of 18 teeth and alveolotomy in an operative procedure lasting 30 minutes.

The extent of hemorrhage in oral surgery has been vastly underestimated. The blood loss associated with extraction of teeth and alveolotomy in the average patient compares with blood losses encountered in major surgery. It is recommended that blood loss determinations be made a routine procedure during exodontia.

Some correlation between blood loss and age and sex of the patient might have been expected. The authors were unable to demonstrate any in this series.

Time and blood loss are direct surgical antagonists. The longer the operating time, the greater the blood loss. Blood losses in oral surgery may be predicted to some extent. A thorough medical history and preoperative complete blood count on all patients, as well as the condition of the tissues of the mouth, afford valuable information. While having some guide to prognosing blood loss is valuable, in cases of severe blood loss, a method of calculating such loss as it occurs is invaluable.

Although the rate of hemorrhage in oral surgery seems to have a less profound immediate physiologic effect than in other types of surgery, any appreciable reduction of blood volume can be just as disastrous to the patient. (Johnson, R. L., Blood Loss in Oral Surgery: J. Dent. Res., 35: 175-184, April 1956)

\* \* \* \* \*

#### Radiation Exposure to the Head and Abdomen During Oral Roentgenography

Recent studies directed toward evaluation of radiation hazards to the patient and operator during a routine full mouth intraoral roentgenographic examination have suggested that the problem is one of pressing concern. This study was performed in an attempt to reevaluate the hazards when different techniques were used and to express the results in terms of the doses actually delivered to any particular area.

Because relatively small amounts of radiation are known to induce genetic changes, considerable alarm has been expressed recently with regard to the possible effects of roentgen radiation during the taking of pelvic roentgenograms and of fluoroscopy on the ovaries and germ plasma or on the fetus during pregnancy. Even though the extent of the adverse effects of roentgen radiation during pregnancy depends on the period at which the radiation is received, the hazards of radiation were considered a sufficiently significant source of concern to warrant a study to determine the approximate amount



of radiation delivered to an area of skin overlying a developing fetus during the course of exposure of full-mouth intraoral roentgenograms.

Forty adult volunteer patients, aged 35 to 71 (35 men and 5 women), were studied during the course of exposure of one full mouth series of periapical roentgenograms. During the entire period of 14 exposures, a thimble ionization chamber was maintained in one fixed position on the face of the patient.

The full mouth series of roentgenograms included a periapical film of each of the following 14 areas: upper right molar, upper right bicuspid, upper right cuspid, upper central incisor, upper left cuspid, upper left bicuspid, and upper left molar, as well as of the same tooth areas in the lower jaw. Exposure for each area was made in accordance with the directions for exposure of Eastman Kodak radiatized film. Complete exposure of both arches required approximately 41 seconds.

To establish the intercurrent exposure to radiation in the lower abdominal area during intraoral roentgenographic procedures, an ionization (25 r) chamber was placed externally on the clothing in this area in the course of these procedures with 25 of the 40 patients. This ionization chamber was similarly maintained in one position throughout the full mouth series of roentgenograms.

Because 300 to 400 r may cause erythema, the dose received by the patient is far from insignificant.

More important, even than the actual figures obtained is the need for realization of the potential dangers of roentgen ray radiation delivered to the patient. If these dangers are fully realized, then use of the x-ray machine will be routinely tempered with caution. Certainly, insofar as the patient is concerned, the installation of an aluminum filter, the use of a collimator, perhaps the use of the long cone technique (which possibly would increase the operator's exposure by virtue of increased exposure time), the use of a roentgen ray-proof shell housing for the tube, and the possible use of protective clothing for the patient's neck and body to protect from secondary and scattered radiation, as suggested by Nolan, are in order.

A study is now in progress dealing with the exposure of the patient and operator during the use of standard and more sensitive films. The results are not definite as yet; however, a simple method of reducing danger of radiation to the patient might be to use faster speed x-ray film in place of the standard film. Such films are readily available commercially and may provide pictures of reasonably comparable quality while at the same time they may decrease the radiation to the patient possibly by as much as 75%.

In the course of 40 full mouth series of roentgenograms taken of 40 individuals, the average exposure to radiation of the skin in the upper molar area was 55.4 r; in the upper bicuspid area, 76.9 r; in the upper cuspid area, 70.6 r; in the upper central incisor area, 63.9 r; in the lower bicuspid area, 55.8 r; and in the lower molar area, 59.0 r. The average exposure to radiation of the skin in the lower abdominal area was 0.45 r.

These observations indicate the magnitude of the radiation hazard to the patient during intraoral roentgenographic diagnosis. These hazards should be investigated so that the source of radiation and the area radiated can be better controlled. Whether the exposure of the patient can be decreased by using x-ray film of increased emulsion sensitivity with resultant decreased exposure time should also be investigated. (Budowsky, J., et al., Radiation Exposure to the Head and Abdomen During Oral Roentgenography: J. Am. Dent. A., 52: 555-559, May 1956)

\* \* \* \* \*

### Hypothermia and Hypotension for Major Pelvic Surgical Procedures

The cases of 5 patients undergoing radical hysterectomy with pelvic node dissection and 1 case of anterior exenteration are presented as a preliminary report. The purpose is not to go into the merits of surgery versus irradiation, but to present a different anesthetic technique under which the surgery was performed.

All patients for radical pelvic surgery underwent similar preoperative examinations once a diagnosis was made. This consisted of a complete physical examination with medical consultation and treatment as indicated. An x-ray film of the chest, intravenous pyelogram, barium enema examination, cystoscopy, proctoscopy, and bowel preparation with antibiotics were included. The laboratory examinations included a complete blood count, urinalysis, and blood urea nitrogen and total serum protein determinations. The disease, the value of surgery, and possible complications were explained to each patient.

There were no special preanesthetic preparations. An operating room cardioscope was attached to each patient before the induction of anesthesia, and a thermocouple was inserted within the rectum for continuous temperature recordings on a Leeds and Northrop Speedomax G Machine. All patients were induced with intravenous Pentothal, and endotracheal intubation was performed after the administration of d-Tubocurarine. Anesthesia was maintained with a mixture of 50 to 50% nitrous oxide-oxygen, and the occasional administration of additional intravenous Pentothal. The patient's respirations were controlled by attaching the anesthesia machine to a Blease Pulmoflator and establishing automatic positive pressure breathing with a negative pressure phase at a rate of 16 to 20 breaths per minute and a tidal exchange of 400 to 500 cc.

Cooling was begun immediately after the induction of anesthesia by placing the patient on two rubber mattresses through which ice water was circulated from a Therm-o-rite machine. The body temperature was lowered at a rate of 2 to 3° C per hour. Arfonad, 0.1% solution in 5% dextrose in



water was administered by intravenous infusion simultaneously with the initiation of cooling. The Arfonad was administered for the purpose of maintaining a mild controllable degree of vasodilation to facilitate the cooling and not for the purpose of reducing the blood pressure. During the initial period of Arfonad administration, the blood pressure remained at normal levels or was lowered not more than 5 to 10 mm. Hg. As the patient's body temperature was reduced to the range of 32 to 30° C, the blood pressure was steadily reduced and maintained in the range of 80-90/60-70 mm. Hg. Neosynephrine, 0.0002% solution, was administered intravenously whenever the blood pressure fell below these levels.

The rationale of using hypotension with hypothermia is 2-fold: (1) The surgeon is presented with a relatively bloodless field; and (2) the complications encountered when lowering the body temperature are reduced.

The use of hypotension alone results in a decreased cerebral blood flow with a widening of the A-V oxygen difference which at times reaches anoxic levels. There is no reduction in cerebral oxygen consumption. Cerebral oxygen consumption can be reduced by deep anesthesia or by the use of hypothermia. Hypothermia would seem to be the more physiologic of these two methods because it probably reduces the total cellular process, whereas deep anesthesia probably interrupts isolated processes in cellular metabolism.

The techniques of hypothermia and hypotension seem to complement each other because the use of a controllable vasodilator facilitates cooling by blocking the reflex vasoconstriction due to cold and reduces the work load on the heart. Hypothermia, on the other hand, seems to protect the vital organs against hypotensive episodes. No arrhythmias were encountered in these cases.

It is postulated that the technique described would be of advantage to the surgeon in treating some of the complications that arise during surgery, such as inadvertent injury of a large vessel with the sudden loss of a great quantity of blood. With the decreased metabolic rate, it would be possible to obliterate the blood flow for longer periods of time with an increased margin of safety while the repair was being accomplished. (Albert, S.N., Sites, J.G., Eccleston, H.N. Jr., Hypothermia and Hypotension for Major Pelvic Surgical Procedures: Med. Ann., District of Columbia, XXV: 313-315, June 1956)

\* \* \* \* \*

### Primary Hepatoma in Infants and Children

Primary hepatoma is of relatively rare occurrence in infants, but in spite of its low incidence, it is one of the commonest neoplasms of the liver seen in infancy and early childhood. Although numerous articles have been written about its pathology, clinical aspects, and therapy, no study could be found in which there was an attempt to establish roentgen criteria for the

diagnosis. This article deals with roentgen findings in 11 cases of primary hepatoma in infants and young children.

Seven of the 11 patients were girls. The youngest of the series was 4 days, the oldest 9 years of age. Seven were less than 14 months of age. All the mixed embryonal hepatomas were in this younger group.

The duration of symptoms ranged from 4 days to 5 months. Four patients were completely asymptomatic with an abdominal mass discovered on routine physical examination. The symptoms in the others consisted most frequently of tiredness, weakness, and some form of abdominal pain. With the exception of 1 patient, all of the group were anemic. The anemia was mild (between 12 and 13 gm. hemoglobin) in the older children and moderate to severe (below 10 gm.) in the infants.

On the basis of analysis of the 11 cases, the authors concluded that a presumptive diagnosis of hepatoma can be made roentgenologically in an anemic child with a growing mass in the upper abdomen. Roentgen studies will make possible localization of the mass intraperitoneally by demonstrating displacement of the anatomic landmarks. The kidney on the involved side is usually seen to be separate from the tumor; furthermore, it may be depressed and pushed back. The duodenojejunal juncture, which is intimately fixed to the retroperitoneal structures by the ligament of Treitz, is never pushed forward—a sign that is easily verified by a lateral film of the gastrointestinal tract. The portions of the ascending and descending colon that are retroperitoneal can be seen posteriorly in normal position, while the transverse colon, with its long mesentery, is displaced anteriorly, frequently being wrapped around the mass. The second portion of the duodenum is also seen in its normal retroperitoneal position. The landmarks for determination of intraperitoneal or extraperitoneal masses in children are described and discussed in more detail elsewhere. The mass of a primary carcinoma of the liver is inseparable from the liver and usually presents an undulating lower border.

The differential diagnosis of primary carcinomas of the liver includes sarcoma, hemangio-endotheliosarcoma, Hodgkin's disease, liver cysts, Wilms' tumor, and neuroblastoma with hepatic metastases. Differentiation from Wilms' tumor and neuroblastoma is not too difficult because it can be demonstrated that these tumors are retroperitoneal.

Cirrhosis of the liver, hepatitis, reticuloses, congestive hepatomegaly, abscess of the liver, and other causes of hepatomegaly can, in most cases, be differentiated from primary carcinoma of the liver in infancy and childhood if the roentgen findings of hepatomegaly are correlated with the history, physical findings, and pertinent laboratory data.

It was found that in the majority of cases the diagnosis could be made by simple roentgen studies such as upper and lower gastrointestinal tract examinations and urographic studies with the aid of lateral views. The most frequent and helpful clinical signs were the presence of a growing upper



abdominal mass and anemia. (Margulis, A. R., Nice, C. M. Jr., Rigler, L. G., The Roentgen Findings in Primary Hepatoma in Infants and Children: Radiology, 66: 809-816, June 1956)

\* \* \* \* \*

### The Safety of Curare in Anesthesia

To justify the continued use of curare, the authors reviewed the records of patients in whom the drug had been used to see if their clinical impressions of its safety were borne out by careful analysis of the case histories. A review was made of surgical patients from January 1950 to October 1955. In this period, 21,753 operations were performed; in 1650 cases curare was used as a muscle relaxant. This represented 7.5% of the total.

The curare used in this study was d-tubocurarine and for the entire period of the study the drug was purchased from one manufacturer. This was found to be a satisfactory compound and the authors found no reason for their anesthesiologists to use any of the other muscle relaxants and are, therefore, not familiar with them in actual use.

In examining the 1650 cases in which curare was used, it was found there were 1037 intraperitoneal procedures and 613 extraperitoneal procedures. In the intraperitoneal procedures, the maximum amount of curare used was 36 mg. and the minimum amount was 1.5 mg. with an average of 12.6 mg. In the extraperitoneal procedures, the maximum amount used was 39 mg. and the minimum amount was 2 mg., also with an average of 12.6 mg.

Curare was used chiefly in combination with pentothal, ether, nitrous oxide, and cyclopropane. The largest number of operations were done under pentothal, curare, nitrous oxide, and oxygen (43%), and the smallest number under pentothal, curare and cyclopropane (4%). Curare, pentothal, and oxygen alone were used in 30% of the cases, and pentothal, curare, and ether in 9% of the cases. In the remaining 14% of cases, mixtures of various anesthetic agents with curare were used.

It should be remembered that ether itself has a "curariform action," and because of this, the dosage of curare should be greatly reduced when used with ether.

Charts were reviewed to find any complication that could be attributed to anesthesia. Seventeen cases were found (1.03%). The most common complications reported were shallow respirations and cyanosis (six cases) laryngospasm and coughing (three cases), and bradycardia (two cases). Insufficient relaxation was found in only five patients, and in one patient there was cardiac arrest. This occurred in an 85-year-old man following a hernioplasty.

In presenting an analysis of a small number of cases (1650) of anesthetics in which curare was used, the authors do not believe that anything can be established, but hope to stimulate others to examine their records. With

only one serious non-fatal complication in this series, they believe that curare still has a definite place in the anesthesiologist's and anesthetist's armamentarium if it is given with care and proper selection of cases—as all anesthetics should be.

The choice of the anesthetic agent should be a joint responsibility of the surgeon and the anesthetist. With good cooperation between the two, both jobs will be made easier and the patient benefited.

Beecher and Todd have stated that "as a result of their study, many individuals are examining their anesthesia performance with a clearer and sharper eye than before." The authors hope that this study will further stimulate physicians to study their own records of anesthesia. (Albertson, H.A., Trout, H.H. Jr., Morfin, E., The Safety of Curare in Anesthesia: Ann. Surg., 143: 833-836, June 1956)

\* \* \* \* \*

#### Inadequate Screening of Submarine School Applicants

Eight percent of the enlisted personnel reporting to the U.S. Naval Submarine Base for submarine training during the last 8 months were unable to take this training because they did not meet the physical standards for submarine duty. This means that 175 men, and in some cases their families, have been needlessly transported to New London at considerable expense. This fact might be accepted as one of the exigencies of the Service if it were not largely preventable. Defects in vision and hearing accounted for two-thirds of the rejections. Approximately 4% of the men reaching New London failed to meet the visual standards for submarine duty. One out of four of these men had visual acuities of 20/100 or less in one or both eyes.

From interviewing the men with unacceptable physical defects, it appears that tests are improperly administered with even actual coaching of applicants through the vision and color vision tests. All candidates are reexamined at New London, hence no service is done either to the man or the Naval Service by such endeavor. It is recognized that medical officers are frequently subjected to considerable pressure to "pass" individuals unable to meet the physical standards. This pressure is frequently accompanied by the assurance "If I can just get there, Doc, I can handle it from then on." The statistics quoted below obviously belie that statement.

It is also believed that some misunderstanding is arising from the working of subparagraph (b), Article 15-20, Manual of the Medical Department. Specific reference is made to this sentence: "In cases of defective vision below these standards, an exception may be made if there is previous submarine experience, or in individual cases where conditions warrant deviation from these levels." Such exceptions are made at New London, but they are the subject of considerable individual study. The rule of thumb



applied at the Naval Medical Research Laboratory is this: No officer or man may serve on submarines who will become noneffective without his spectacles. Making this decision requires an intimate knowledge of submarines, the needs and demands of the Service, and of the duties the men will perform on board submarines. It follows that only medical officers qualified in Submarine Medicine are in a position to intelligently make these decisions.

The following specific action is recommended:

a. The visual acuity of applicants for submarine training should be carefully checked. It is important that the candidate not be permitted to squint while taking the examination. Those who do not meet the prescribed standards should be checked on several different days, preferably by a medical officer. Members of the Seaman branch (this includes principally Quartermasters, Seamen, and Torpedomen) may be considered qualified for submarine training if their worst reading is not less than 20/25. Members of other branches (below deck rates) may be considered as qualified if their best reading is at least 20/30 and their worst reading is not less than 20/40.

b. Wherever possible, submarine candidates should be given an audiogram. A hearing loss of 15 db. through the ranges 250 through 2000 cps. and no greater than 25 db. at the frequencies of 4000 and 8000 is considered to be a normal audiogram.

c. In questionable cases individual medical officers are invited to address inquiries to the Officer in Charge, U.S. Naval Medical Research Laboratory, Submarine Base, New London, Conn., who will be pleased to advise medical officers concerning questionable cases.

Physical defects noted on physical examinations of enlisted submarine candidates (225 / men, 8 mo. period):

Low Visual Acuity .....	84	Obesity .....	*** 5
Defective Color Vision .....	8	Acne .....	4
Low Auditory Acuity .....	32	Perforated Tympanum .....	1
Hypertension .....	** 6	Dental .....	12
Miscellaneous* .....	23		

---

Total Physical Drops ..... 175

---

\* Includes: Chronic Backaches, Decompression sickness, Failed pressure, Tank failure, Mental, Chronic Asthma, Enuresis.

\*\* Including some with systole as high as 160 mm. Hg.

\*\*\* Including some as much as 25-35 lbs. overweight.

(Medical Research Laboratory, New London)

### Postgraduate Short Courses for Medical Officers

The following postgraduate short courses will be given as indicated. Eligible officers are those who meet the criteria prescribed by BuMed Instruction 1520.8 of 6 February 1956.

Eligible and interested officers should forward requests via official channels, addressed to the Chief of the Bureau of Medicine and Surgery. Requests for attendance must be received in BuMed at least 30 days prior to commencement of the course requested. Travel and per diem orders chargeable against Bureau funds will be authorized those approved for attendance.

<u>Course</u>	<u>Location</u>	<u>Dates</u>
Management of Mass Casualties	Walter Reed Army Institute of Research, Walter Reed Army Medical Center	20-25 Aug 56 29 Oct-3 Nov 56 17-22 June 57
	Army Medical Service School, Brooke Army Medical Center, San Antonio, Texas	30 July-3 Aug 56 1-5 Oct 56 25 Feb-1 Mar 57 1-5 Apr 57 3-7 June 57
Ninth Annual Symposium on Pulmonary Diseases	Fitzsimmons Army Hospital, Denver, Col.	10-14 Sep 56
Kimbrough Urological Seminar	Walter Reed Army Medical Center	19-21 Sep 56
Forensic Pathology	Armed Forces Institute of Pathology, Washington, D. C.	5-9 Nov 56
Pathology of Diseases of Laboratory Animals	Armed Forces Institute of Pathology	10-14 Dec 56
Ophthalmic Pathology	Armed Forces Institute of Pathology	25-29 Mar 57
Application of Histo-chemistry to Pathology	Armed Forces Institute of Pathology	6-8 May 57

(ProfDiv, BuMed)



From the Note Book

1. BuPers Instruction 1300.33 of April 9, 1956, establishes new policies, procedures, and eligibility requirements for assignment of officers and enlisted personnel to pay units of the Naval Reserve. Also contained in this instruction are policies governing retention, detachment, transfer, and time limitations for personnel assigned to pay units. All Reserve Dental Units should be informed of the existence of this instruction. (TIO, BuMed)
2. LT Elizabeth Feeney, NC USN, was recently presented a letter of commendation by the Commanding Officer of the Tripler Army Hospital, for her outstanding work during an epidemic of poliomyelitis in Hawaii. (TIO, BuMed)
3. Captain John F. McMullin, MC USN, Chief of the Neuropsychiatry Service of the U.S.N.H., Philadelphia, has been appointed as Associate in Psychiatry in the Jefferson Medical College, Philadelphia.  
Commander Warner D. Bundens, MC USN, Chief of the Orthopedic Service of the U.S.N.H., Philadelphia, has been appointed Associate in Orthopedic Surgery in the Graduate School of Medicine of the University of Pennsylvania. (USNH, Philadelphia, Pa.)
4. The Public Health Service recommended on 2 July 1956 that State Health agencies extend priority age groups for poliomyelitis vaccine to include all children under 20 and pregnant women as soon as the supply of vaccine in the State warrants such action. (PHS, Dept. HEW)
5. Important decisions relating to the measurement and safe use of radiations were announced at the triennial meetings of the International Commission on Radiological Units and the International Commission on Radiological Protection. The principal outcome of ICRP deliberations was a revised set of recommendations for permissible levels of ionizing radiation to which human beings may be exposed. (National Bureau of Standards)
6. An editorial "Physician Heal Thyself" appearing in the Journal of the American Dental Association, Vol. 52, p. 626, May 1956, is one that should be of great interest to both dentists and physicians. The editorial points out the necessity for these professional personnel to take every reasonable precaution in conserving their health and well being.
7. In a periodic examination program it was noted that 35% of those examined had conditions revealed to them and more than half were without symptoms. In major conditions detected, 43% were discovered in the initial examination and 57% by reexamination. Twenty percent of the conditions noted were entirely

corrected and 33% improved by treatment. In a large percentage of the remainder, medical supervision enabled the individuals to carry on their usual business activities. (Indust. Med., June 1956; S.C. Franco, M.D.)

8. In a study of the records and X-Rays of 36 patients with proved renal cell carcinoma and 47 with solitary serous cysts of the kidney, no absolute pyelographic or aortographic criteria for diagnosis could be found. Diagnosis of cancer is favored by: (1) history of pain, hematuria, fever; (2) the presence of anemia or a palpable mass; (3) radiographic observations of intrarenal calcification, apparent calyceal amputation, or obliteration of the psoas outline. (J. Urol., June 1956; B.G. Clarke, et al.)

9. The authors believe that the use of intravenous Pitocin under close supervision is an excellent adjunct in labor and that its use may be enlarged to include the grand multiparous patient and in selected cases of bleeding in pregnancy and labor. (Am. J. Obst. & Gynec., June 1956; P.C. Williams, M.D., T.B. McMahon, M.D.)

10. A clinicopathologic study of 18 patients in whom bronchial-stump recurrence developed following pulmonary resection for squamous-cell carcinoma of the lung is presented in J. Thor Surg., June 1956; H.C. Habein Jr., M.D., J.R. McDonald M.D., O.T. Clagett, M.D.

11. Studies of 8 cases of congenital heart block, including the first published case of mitral atresia with congenital heart block are presented in Am. J. Med., June 1956; E. Donoso, M.D., et al.

12. A gracilis muscle transplant operation to construct a bladder sphincter for the correction of urinary incontinence in male children is described in Ann. Surg., June 1956; K. Pickrell, M.D., et al.

13. Eleven consecutive operative cases of saddle embolus of the aorta are analyzed in Surgery, June 1956; C.J. Schien, M.D., et al.

14. This article discusses the abnormal mechanisms arising from trauma to the chest and outlines the immediate and late treatment of specific lesions. G.P., June 1956; J.W. Strieder, M.D.

15. Experience with the use of Aramine in clinical shock of varied etiology in over 250 cases is described. Aramine possesses advantages that make it a safe and useful agent in conditions where a potent vasopressor drug is indicated. (Circulation, June 1956; G.H. Stechel, M.D., et al) )

\* \* \* \* \*



Office of Naval Research Celebrates Tenth Anniversary

In the decade since World War II, the Navy has realized greater technological acceleration than ever before. The Office of Naval Research, celebrating its tenth anniversary on the first of August, has been instrumental in meeting the demands of the "new" Navy by manning the Navy's front line of defense in what has become the most important theater of modern warfare, scientific knowledge.

ONR supplies the material bureaus with much of the information so necessary to development which is available only through basic research. Through its large contract research program, both basic and applied research are performed in many fields of potential importance to the Navy which might otherwise be relatively unsupported and unexplored. The Office of Naval Research coordinates Navy-wide research and development to insure a complete and energetic program.

During the last 10 years, a stronger emphasis has been placed upon research in the basic sciences because of the world-wide race for technological supremacy. The Navy is now participating in most scientific fields, not only increasing its own potential, but benefiting the scientific community as a whole through the work of ONR and the material bureaus.

The Bureau of Medicine and Surgery has worked closely with ONR in the field of aviation medicine; much of the research in the biological and psychological sciences performed there is of interest to BuMed. ONR research in electronics and even in geography has an effect on the Bureau. In addition, the Office of Naval Research administers the BuMed contract research program. (ONR)

\* \* \* \* \*

Board CertificationsAmerican Board of Dermatology and Syphilology

LT Frederick D. Malkinson MC USNR (Inactive)

American Board of Internal Medicine

LT Henry G. Carleton MC USNR (Inactive)

LT Banks R. Cates, Jr. MC USNR (Inactive)

LT Don Fox MC USNR (Inactive)

LT Robert H. Frankenfeld MC USNR (Inactive)

LT Abby Franklin MC USNR (Inactive)

LTJG John C. Grammer, Jr. MC USNR (Inactive)

LT Clell C. Gray, Jr. MC USNR (Inactive)

LT Alvin S. Hambly, Jr. MC USNR (inactive)

LT Douglass S. Johnson MC USNR (Inactive)

LT Ernest L. Wilkinson MC USNR (Inactive)

American Board of Ophthalmology

LCDR Robert J. Schmoll MC USNR (Inactive)

American Board of Orthopedic Surgery

LTJG John S. Gaul MC USNR (Inactive)

LT Edward J. Hanley, Jr. MC USNR (Inactive)

LTJG John D. Leidholt MC USNR (Inactive)

American Board of Pediatrics

CDR Frederick B. Becker MC USN

LT Harry E. Butson MC USNR (Inactive)

LTJG Charles H. Crane MC USNR (Inactive)

LT William Crittenden MC USNR (Inactive)

LT George T. Critz MC USNR (Inactive)

LT Robert L. Hoffman MC USNR (Inactive)

LT John P. Morris MC USNR (Inactive)

LTJG Samuel D. Rowley MC USNR (Inactive)

LT Andrew H. Thalheim, Jr. MC USNR (inactive)

LCDR Robert S. Wicksman MC USNR (Active)

LTJG Howard L. Wilson MC USNR (Inactive)

LTJG Bernard D. Zaleznak MC USNR (Inactive)

American Board of Plastic Surgery

LTJG Peter Randall MC USNR (inactive)

American Board of Proctology

LCDR Joseph B. Sarnier MC USNR (Inactive)

American Board of Psychiatry and Neurology

LT Robert H. Coffey, Jr. MC USNR (inactive)

LT William E. Lebeau MC USNR (Active)

LT Kent E. Robinson MC USNR (Inactive)

LT John R. Rushton III MC USNR (Active)

LT Silas L. Warner MC USNR (Inactive)

American Board of Radiology

LTJG Hubert E. Batten MC USNR (Inactive)

CAPT Edward T. Byrne MC USN

LT Randolph G. Bradshaw MC USNR (Inactive)

LT Charles R. Henkleman MC USN

LT Robert E. Roth MC USNR (Inactive)

CDR Norman L. Yood MC USN



American Board of Surgery

LCDR Samuel N. Bacon, Jr. MC USNR (Inactive)  
 CDR Allen L. Bryan MC USNR (Active)  
 LT Donald R. Burke Jr. MC USNR (Active)  
 LCDR Donald W. Edwards MC USN  
 LTJG Lawrence H. Erdman MC USNR (Inactive)  
 LT Manuel Garrido-Carmona MC USNR (Active)  
 LT Frank L. Gibson MC USNR (Inactive)  
 LT Albin N. Grenda MC USNR (Inactive)  
 LTJG Lawrence K. Groves MC USNR (Inactive)  
 LTJG Gustave A. Haggstrom MC USNR (Inactive)  
 LTJG Gale D. Johnson MC USNR (Inactive)  
 LCDR Charles C. Henderson MC USNR (Inactive)  
 LT Charles R. Kelly MC USNR (Active)  
 CDR William G. Krech MC USN  
 LT John H. Mahaffey MC USNR (Inactive)  
 LTJG William J. McCann, Jr. MC USNR (Inactive)  
 LCDR James A. Mitchel MC USNR (Inactive)  
 LT Hugh B. O'Donnell MC USNR (Inactive)  
 LTJG James S. O'Hare MC USNR (Inactive)  
 LTJG Fremont C. Peck, Jr. MC USNR (Inactive)  
 CAPT Lindsay R. Riddle MC USN  
 LT Carl G. Rollins, Jr. MC USNR (Active)  
 LT Kenneth L. Senter MC USNR (Inactive)  
 LTJG Albert M. Storrs, Jr. MC USNR (Inactive)  
 LCDR Edgar E. Thomas, Jr. MC USN  
 CAPT Joseph J. Timmes MC USN - Thoracic  
 LTJG Luther T. Tyler MC USNR (Inactive)  
 LT William R. Waddell MC USNR (Inactive)  
 LT George L. Wilson MC USNR (Inactive)  
 CDR Theodore H. Wilson Jr. MC USN  
 LTJG Whitney Woodruff MC USNR (Inactive)

American Board of Urology

LT Eldon L. Caffery MC USNR (Active)  
 LTJG Robert B. Challinor MC USNR (Inactive)  
 LTJG Charles H. Harrison, J . MC USNR (Inactive)  
 LT Avrom M. Isaacs MC USNR (Inactive)  
 CDR William E. Morris MC USN  
 LT Edwin M. Tomlin MC USN

\* \* \* \* \*

Recent Research ProjectsNaval Medical Research Institute, NNMC, Bethesda, Md.

1. Dependence of Length of Muscle Fibers upon ATP Concentration. NM 000 018.04.14, 6 January 1956.
2. Is Energy Transferred from ATP to Myosin at the Moment that ATP is Split? Lecture and Review Series No. 56-1, 3 February 1956.
3. A Calorimetric Determination of the Heat of an Antigen-Antibody Reaction. NM 000 018.06.45, 6 February 1956.
4. Swelling of Protein Molecules in Solution and the Alpha-Beta Transformation. NM 000 018.06.49, 1 March 1956.
5. Progressive Destruction of Renal Homografts Isolated from the Regional Lymphatics of the Host. NM 007 081.21.02, 7 March 1956.
6. Angioarchitectural Changes Associated with Rapid Rewarming Subsequent to Freezing Injury. NM 007 081.14.01, 16 March 1956.
7. A Perfusion Apparatus for the Bioassay of Isolated Organs of Small Laboratory Animals. Memorandum Report 56-4. NM 000 018.07, 19 March 1956.
8. Hypothermia and Cerebral Vascular Lesions. I. Experimental Interruption of the Middle Cerebral Artery During Hypothermia. NM 007 081.30.01, 19 March 1956.
9. Experimental Therapy of the Gastrointestinal Syndrome Produced by Lethal Doses of Ionizing Radiation. NM 006 012.04.93, 21 March 1956.
10. Some Effects of Ionizing Radiation on the Physiology of the Gastrointestinal Tract. Lecture and Review Series No. 56-2, 29 March 1956.
11. The Effect of Acute Hyperthermia on Adrenal 17-Hydroxycorticosteroid Secretion in Dogs. NM 007 081.22.11, 9 April 1956.
12. Changes in Norway Rat Populations Induced by Introduction of Rats. NM 004 005.08.04, 26 April 1956.
13. Reserpine Suppression of the Density-Dependent Adrenal Hypertrophy and Reproductive Hypoendocrinism in Populations of Male Mice. NM 004 005.08.06, 1 May 1956.
14. Reduction in Adrenal Weight in Rodents by Reducing Population Size. NM 004 005.08.03, 1 May 1956.
15. Anaerobi Studies of Steroidogenesis Using the Perfused Calf Adrenal. NM 006 012.04.98, 6 May 1956.

Naval Dental Research Facility, Great Lakes, Ill.

1. A Comparison of the pH Values of InVivo Dental Plaque Following Sucrose and Sorbitol Mouth Rinses. NM 008 013.06.12, April 1956.

Naval Air Development Center, Johnsville, Pa.

1. NADC-MA-5604. Rod-Cone Interaction in the Dark-Adapted Eye. Report No. 1, NM 001 110 300, 25 April 1956.



Naval Air Development Center, Johnsville, Pa. (continued)

2. NADC-MA-5605, Mitochrome, a New Respiratory Enzyme. I. The Mediation of Activated Phosphate Transformations in Mitochondria. Report No. 1, NM 001 100 316, 26 April 1956.
3. NADC-MA-5606. The Effect of Partial Supination Combined with the Anti-G Suit on G Tolerance in Navy Pilots. Report No. 4, NM 001 100 300, 8 May 1956.
4. NADC MA-5607. The Nature of Pain. Report No. 9, NM 001 103 301, 4 June 1956.

Naval Medical Research Laboratory, Submarine Base, New London, Conn.

1. A New Formula for Using the Audiogram to Predict Hearing Loss for Speech. Report No. 273. NM 003 041.56.07, 24 February 1956.

Naval School of Aviation Medicine, NAS, Pensacola, Fla.

1. An Experimental Analysis of Antecedents of Sleep. NM 001 109 113, Report No. 1, 7 February 1956.

\* \* \* \* \*

BUMED INSTRUCTION 5360.10B

15 June 1956

From: Chief, Bureau of Medicine and Surgery  
Commandant of the Marine Corps  
To: All Ships and Stations

Subj: Decedent Affairs Program; instructions concerning fiscal accounting certain administrative procedures, and uniforms and escorts for deceased Marine Corps personnel

Ref: (a) SecNavInst 5360.3, Subj: Decedent Affairs Program  
(b) BuMedInst 5360.17, Subj: Decedent Affairs Program - current dead  
(c) BuMedInst 5360.18, Subj: Decedent Affairs Program; eligibility and authorized expenses  
(d) NavCompt Manual (NavExos P-1000, 1952) para's. 023304, 024343-4, 024404-3, and 026100-126115

This instruction provides fiscal accounting instructions relative to care and disposition of remains of deceased personnel covered by the Decedent Affairs Program. It also provides pertinent information concerning uniforms and escorts for deceased Marine Corps personnel. BuMedInst 5360.10A is canceled.

BUMED INSTRUCTION 6230.8 SUP-2

28 June 1956

From: Chief, Bureau of Medicine and Surgery  
To: All Ships and Stations  
Subj: Poliomyelitis vaccine, Salk; extension of use of  
Ref: (a) BuMedInst 6230.8 of 16 Sep 1955  
(b) BuMedInst 6230.8 Sup-1 of 16 Dec 1955

This instruction promulgates new policies for the use of poliomyelitis vaccine in dependents and military personnel.

\* \* \* \* \*

BUMED INSTRUCTION 6222.3B SUP-1

2 July 1956

From: Chief, Bureau of Medicine and Surgery  
To: All Ships and Stations Having Medical Personnel Regularly Assigned  
Subj: Venereal disease; prevention of  
Ref: (a) BuMedInst 6222.3B of 25 Oct 1954

This instruction supplements reference (a) in respect to policy on the use of oral penicillin prophylaxis for the prevention of gonorrhea.

\* \* \* \* \*

BUMED INSTRUCTION 6710.31

5 July 1956

From: Chief, Bureau of Medicine and Surgery  
To: All Ships and Stations  
Subj: Defective medical and dental material; authority for disposition of  
Ref: (a) Medical and Dental Materiel Bulletin, Edition No. 67 of 1 Jun 1956  
(b) Art. 25-21 ManMed

This instruction provides authority for the disposal of defective material listed in paragraph IV of reference (a).

\* \* \* \* \*



**DENTAL****SECTION**


---

Graduation of Officers from Naval Dental School

On June 29, 1956, Rear Admiral Clemens V. Rault, DC USN (Ret), Dean of the School of Dentistry, Georgetown University, Washington, D. C. delivered the graduation address at exercises for twenty-eight U.S. Naval Dental officers and two foreign naval officers, one from the Republic of Korea, and the other from Thailand.

Twenty-two of the group completed a ten months General Postgraduate Course; eight finished residency and specialized courses. LT Yong Son Kim, MC ROK Navy, completed a six months observership in Prosthetic Dentistry; LT Saroch Pradumratna, Royal Thai Navy, finished a twelve months course in General Dentistry.

Captain Edward Kenney, MC USN, Commanding Officer, National Naval Medical Center, presented certificates to the graduates whose names follow:

Postgraduate Course

CDR Russell R. Funk, Jr.  
 CDR Joseph G. Hancock  
 CDR Thomas J. Hanson  
 CDR James F. Keenan  
 CDR Donald J. Miller  
 CDR Walter O. Stanford  
 LCDR George I Gilchrest  
 LCDR William J. Kennedy  
 LCDR William A. Monroe, Jr.  
 LCDR Robert S. Neskow, Jr.  
 LCDR William J. Rogers  
 LCDR Ben C. Sharp  
 LT Fred M. Amman  
 LT Robert W. Bagby  
 LT Harry J. Dennis, Jr.  
 LT Raymond E. George  
 LT Walter N. Johnson  
 LT Edward C. Penick

Postgraduate Course

(continued)

LT Phillip V. D. Reitz  
 LT Charles S. Scruggs  
 LT Irving J. Weber, Jr.  
 LT Andrew Wyda, Jr.  
Residency in Prosthodontics  
 CAPT Charles M. Heartwell, Jr.  
 CDR Robert L. Joseph  
 CDR William M. Marking  
Residency in Periodontics  
 CAPT Robert H. Loving  
 CDR Dwight W. Newman  
Residency in Oral Surgery  
 CDR Robert A. Middleton  
Observership in Prosthetic Dentistry  
 LT Yong Son Kim MC ROK Navy  
General Dentistry  
 LT Saroch Pradumratna, Royal Thai Navy

BuMed Instructions and Notices

BuMed Instruction 1321.2A of 5 June 1956. Attendance at meetings of scientific, technical, professional, or similar organizations (all BuMed managed activities).

Purpose. Instruction establishes the prerequisites for attendance by military and civilian personnel of the Medical Department of the Navy at meetings sponsored or convened by non-Federal, scientific, technical, professional, or similar organizations to comply with the provisions of references (a) and (b).

BuMed Notice 6750 of 5 June 1956. Dental Operating Units; conversion to higher speed operation.

Purpose. To furnish information for the conversion of dental operating units to higher speed operation; and to furnish information, guidance, and instructions relative to procurement of items required for such conversion.

BuMed Notice 7110 of 29 May 1956. Estimates of budgetary requirements of medical and dental facilities.

Purpose. Notice is issued to advise addressees about the preparation and submission of estimates of budgetary requirements for the maintenance and operation of medical and dental facilities in fiscal year 1957; and the preparation and submission of estimates of the financial requirements of activities assigned medical and dental research projects.

\* \* \* \* \*

Dental Technicians Graduate from B and C Schools

Twenty-eight Naval Dental technicians who successfully completed the Advanced Course (General), Advanced Course (Prosthetic), and the Basic Course for Dental Repair Technicians, were graduated at the Naval Dental School, NNMC, 22 June 1956.

Captain Ben W. Oesterling, DC USN, Head of the Professional Branch, Dental Division, Bureau of Medicine and Surgery, gave the graduation address.

Before presenting the graduation certificates, Captain Curtiss W. Schantz, DC USN, Commanding Officer, U.S. Naval Dental School, held meritorious masts for the men who earned honors in each course. The honor men were:

S. E. Waldo DT1 . . . . . Advanced Course (General)  
V. Blair DT1 . . . . . Advanced Course (Prosthetic)  
R. R. Roy DT1 . . . . . Basic Course (Repair)

\* \* \* \* \*





## MEDICAL RESERVE SECTION

### New Requirements for Promotion

(This concludes the presentation of pertinent parts of BuMed Instruction 1416.3. Refer to the News Letter of 22 June and 6 July 1956.)

### CDR to CAPT - Medical Corps, Inactive

<u>Fiscal Year in Which Selected</u>	<u>Subjects in which exemptions will be required:</u>
1956.....	Any two subjects in the Executive Area
1957.....	Any three subjects in the Executive Area
1958.....	All subjects in the Executive Area
1959.....	All subjects in the Executive Area plus one subject in the Operations Area
1960.....	All subjects in the Executive Area plus any two subjects in the Operations Area
1961 and <u>Succeeding Years</u> .....	All subjects in all Areas

### Part I - Executive Area

<u>Subject</u>	<u>Correspondence Course Exemptions</u>	<u>School Exemptions</u>
1. Administrative Organization and Regulations	Navy Regulations, NavPers 10740-A or Organization for National Security, NavPers 10721	Armed Forces Staff College Naval War College
2. Personnel Administration and Leadership	Education and Training Part I, NavPers 10965-1 and Education and Training Part II, NavPers 10966	

<u>Subject</u>	<u>Correspondence Course Exemptions</u>	<u>School Exemptions</u>
2. (continued)	Personnel Administration NavPers 10968	
3. Military Justice	Military Justice in the Navy, NavPers 10993	U.S. Naval School, Naval Justice

Part II - Operations Area

1. Medico-Legal Matters Misconduct and Line of Duty Suicide Insanity	Legal Medicine Practices (available July 1957)	
2. Retirement and Compensations (for Reserve officers on Active Duty only)	Selected Readings: a. Career Compensation Act, 1949 b. Naval Supplement to the Manual for Courts-Martial, Chapter IX c. Public Law 108, 81st Congress	
3. Logistics	Logistics, NavPers 10902-1 or Operational Planning and Staff Organization (Naval War College)	Naval War College (all courses - 10 months or more) Armed Forces Staff College

\* \* \* \* \*

Change of Address

Please forward requests for change of address for the News Letter to:  
Commanding Officer, U.S. Naval Medical School, National Naval Medical  
Center, Bethesda 14, Md., giving full name, rank, corps, and old and new  
addresses.

\* \* \* \* \*





## PREVENTIVE MEDICINE SECTION

### Poliomyelitis Vaccine

The Bureau of Medicine and Surgery has received reports of instances in which poliomyelitis vaccine has been frozen during transportation or storage. At the present time, there is inadequate evidence to determine the effect of freezing upon the potency or safety of this vaccine. However, upon the recommendation of the most responsible investigators and by triservice agreement, until sufficient evidence has been accumulated to warrant its use, vaccine which has been frozen should be considered unsuitable for use and destroyed. Because of the limited supply and the cost of the vaccine, special attention should be directed to the care of this vaccine so that freezing is avoided.

\* \* \* \* \*

### Announcement - Advanced Training Course in Disease Vector and Pest Prevention and Control

An advanced training course in disease-vector and pest prevention and control has been established at Preventive Medicine Unit No. 1, Naval Air Station, Jacksonville, Fla. The course has been established to provide supervisory pest control personnel with the training leading to certification prescribed in BuDocks Instruction 6250.3 of 1 November 1955. Certification procedures are set forth in BuDocks Instruction 6250.5 of 24 May 1956. The latter instruction was approved by the Bureau of Medicine and Surgery before publication and applies to all Naval and civilian personnel including Medical Department personnel concerned with this program.

This is a formal announcement of the information necessary to expedite application for enrollment in the course. Application details are outlined below.

#### General Information

1. Availability. The course is available to insect and rodent control personnel of the Eighth and Ninth Naval Districts and to those District, River, and Air Training Commands lying in, or to the east, of these districts.

2. Duration and Frequency. Each course covers a period of 21 days and is to be offered quarterly. Convening dates are the third Monday of the second month of each quarter.

3. Eligible Personnel. Prospective trainees should be either graduates of the Environmental Sanitation Technician Course, NH, Oakland, Calif., or officers and civilians of at least comparable educational and technical backgrounds. In addition, all prospective trainees must be either currently connected with, or committed to, active participation in Navy insect and rodent control programs in a supervisory, inspectional, or operational status.

4. Funding. Funds for travel and per diem will be provided by the activity or command to whom the trainee is attached for permanent duty.

5. Quotas. Attendance quotas are available by letter request from the Officer-in-Charge, Preventive Medicine Unit No. 1, NAS, Jacksonville, Fla., via the appropriate chain of command. Correspondence with the Bureau of Medicine and Surgery is not required. Requests should contain a summary of the training and operational-experience background of the prospective trainee. Due to the limited number of individuals that can be accommodated in each course, quotas will be assigned as requests are received. Requests received in excess of the total quota will be given priority for the next course.

6. Quarters and Messing Facilities. Ample quarters and messing facilities for both military and civilian personnel are available aboard the Naval Air Station, Jacksonville, Fla.

7. Uniform and Work. Trainees will report in the uniform of the day and are required to have working uniform or dungarees including appropriate shoes. The nature of the work covered in this course demands some unusual hours with occasional overtime work periods. Trainees will be expected to participate to the fullest extent to realize maximum benefits from the course.

8. Curriculum. The curriculum is designed to provide advanced training in insect and rodent control beyond that obtainable from the Navy courses in environmental sanitation at the University of California and the Environmental Sanitation Technician Course offered at the U.S. Naval Hospital, Oakland, Calif. Intensive classroom and field studies in the advanced techniques of this field are included.

9. Graduation. Successful completion of course work which includes a written and practical examination will provide the background necessary to qualify for certification as required by BuDocksInst 6250.5. Each trainee will be notified of the results of his work through his commanding officer.

Specific Information. The first session will begin at 0800 on 20 August 1956 and will terminate at 1600 on 7 September 1956. This session will be restricted to officer personnel and to supervisory civilian personnel. Quotas for the second session, scheduled to begin on 19 November 1956, will be filled with enlisted and civilian personnel only.



### Shipboard Use of Kerosene-Based Insecticides

Because of fear of fire or explosion hazard, many personnel have been reluctant to use certain kerosene-based insecticides aboard surface vessels in the control of insect infestations for which these insecticides are quite useful. Reports are now available on two studies in Government laboratories showing that kerosene-based insecticides can be safely used at the concentrations recommended without any significant danger. In one test, no fires or explosions were noted even where sparks or flames were introduced into a test chamber containing kerosene sprays at several times the concentrations directed for insect control.

Thus, the precaution in BuMedInst 6250.3 of 23 April 1953, calling for use and storage of these insecticides away from open flames or very hot surfaces, should provide a wide margin of safety. Items wet with kerosene based insecticides should also be dried before flames are lighted. Specifically, storage of kerosene aboard ship should be in the paint and flammable liquid storeroom (Bureau of Ships Manual, 30-4). Of course, recommended fire-preventive practices should be observed at all times. (Bureau of Ships and Bureau of Medicine and Surgery)

\* \* \* \* \*

### Certification in Occupational Medicine

The American Board of Preventive Medicine, Incorporated, which certifies specialists in public health, aviation, and occupational medicine, ceased taking applications for consideration as members of the Founder's Group in Occupational Medicine on 1 July 1956. So far, only a few Naval medical personnel have been accepted in this group. A considerable number, however, were found eligible to take the examinations.

The Bureau of Medicine and Surgery strongly recommends that those applicants found eligible for examination take the tests necessary for certification when they are available. Eligible personnel should write and state their intentions to the Secretary of the American Board of Preventive Medicine, Incorporated, Ernest L. Stebbins, M.D., 615 N. Wolfe St., Baltimore, Md.

Senior medical officers in large Naval industrial activities, should be certified in occupational medicine. It is anticipated that in the not too distant future centers of training in occupational medicine, which are acceptable to the Board of Preventive Medicine, will be established in some of the Navy's large industrial activities for training junior medical officers.

\* \* \* \* \*

Second Progress Report on the Manual of Naval  
Preventive Medicine, NavMed P-5010

Chapter 1, Food-Service Principles, has been printed and is being distributed to all ships and stations with Medical Department representatives regularly assigned and to personnel in environmental hygiene.

Chapter 2, Sanitation of Living Spaces and Related Services, has been printed and is being distributed.

Chapter 3, Ventilation and Thermal Stress Ashore and Afloat. Consideration of the major changes recommended has delayed this chapter. Late September is the contemplated completion date.

Chapter 4, Swimming Pools and Bathing Places, has been printed and is now being distributed.

Chapter 5, Water Supply Ashore. Clearance of this chapter was completed in June. The minor changes contemplated should permit publication by late August as originally anticipated.

Chapter 6, Water Supply Afloat. This chapter is still being assembled from information being received from the field. A realistic completion date of early October is in sight at this time.

Chapter 7, Sewage Disposal. Consideration and consolidation of comments and recommendations are nearing completion. Submission of this chapter to the Government Printing Office in early July is in prospect. As previously indicated, distribution in August is a realistic date.

Chapter 8, Refuse Disposal. There has been no alteration in plans for this chapter which the 23 March 1956 issue of the Medical News Letter reported "requires extensive work for completion—distribution in September or October."

Chapter 9, Insect and Vector Control, is being written at this time. Completion is in prospect for late 1956.

Chapter 10, Insecticides and Dispersal Methods, was distributed in 1953. A reprint of this chapter has been requested and is available upon request to the appropriate District Publication and Printing Office.

Chapter 11, Preventive Medicine Laboratory Methods. Preventive Medicine Laboratory Methods published as a manual in July 1953 is being revised and brought up to date with the Tenth Edition of Standard Methods for the Examination of Water, Sewage, and Industrial Wastes, and the Tenth Edition of Standard Methods for the Examination of Dairy Products. The revision should be completed by August or September permitting its publication as Chapter 11 for possible distribution in October or November.

Chapter 12, Field and Emergency Sanitation. Major changes in the manuscript of this chapter were recommended in the clearance process. A complete rewrite is required and completion for clearance by November or December 1956 is anticipated.



Chapter 13, Medical Statistics. It is anticipated that review of the manuscript of this chapter will be completed in August with clearance by September or October and printing and distribution by November 1956.

Chapters 14 through 16 are contemplated on Communicable Disease Control and Immunization and Occupational Health.

Individual requests for this Manual or for separate chapters will be given consideration upon justification.

Any additional information or inquiries regarding the Manual of Naval Preventive Medicine should be directed to the Chief of Bureau of Medicine and Surgery, Attention: Code 72.

\* \* \* \* \*

#### Industrial Health Data Sheet (NavMed-576a, Rev. 1951)

The Industrial Health Data Sheet, formerly a monthly report, is presently being revised as a quarterly report. The new form will effect an improvement in the method of reporting industrial health data. These changes should reduce the workload in the field activities and provide more accurate data upon which the Bureau of Medicine and Surgery can develop industrial health statistics. It is anticipated that it will be several months before the revised Industrial Health Data Sheet is promulgated to field activities.

The industrial health statistics developed from the Industrial Health Data Sheet reports are sent to all Naval field activities. They are published on a quarterly basis in the journal "Statistics of Naval Medicine." The last report covers the calendar year 1955 and may be found on page 3 of "Statistics of Naval Medicine," May 1956 issue, Vol. 12, No. 5.

\* \* \* \* \*

#### Occupational Health Hazards

Compilations of occupational health hazards are released on a quarterly basis to all Naval industrial field activities submitting Industrial Health Data Reports (NavMed 576) by the Industrial Hygiene Branch of the Preventive Medicine Division of the Bureau of Medicine and Surgery. Data in these releases are obtained from the monthly Industrial Health Data Sheet Reports (NavMed 576) and the narrative reports.

Industrial field activities have shown a great deal of interest and enthusiasm in these quarterly releases. They help to improve on present methods used, do away with poor practices, fill in gaps in the industrial health program, prevent overlapping of work in certain areas, and aid considerably in conducting an effective and economical program.

\* \* \* \* \*

Epidemiological Significance of Fruit and Vegetables  
in the Transmission of Intestinal Infections

An investigation of the presence of human enteric pathogens on fruits and vegetables in Belgrade yielded both Shigella and Salmonella organisms. Six hundred and seventy-three samples of different raw fruits and vegetables, purchased on the Belgrade market during the period from 1951 to 1953 inclusive, were examined for the presence of intestinal pathogens. Shigella and Salmonella were recovered from 11, or 1.6%, of the samples, as follows:

3 Salmonella paratyphi B

2 - lettuce  
1 - asparagus

2 Shigella flexneri 2

1 - tomatoes  
1 - sour cherries

3 Shigella flexneri 3

2 - radishes  
1 - strawberries

3 Shigella sonnei

1 - young onions  
1 - plums  
1 - sour cherries

Proteus morgani was recovered from 71, or 10.5%, of the samples, and Escherichia coli was found in all of the samples (673).

Numerous studies of fruits and vegetables have revealed coliforms. It is believed that this is the first report of pathogenic enteric organisms of human origin being found on fruits and vegetables, although their presence on fruits and vegetables in certain geographical areas has long been assumed. The low percentage of recovery of Shigella and Salmonella probably can be attributed to insensitive sampling techniques. (Milojicic, B., Epidemiological Significance of Fruit and Vegetables in Transmission of Intestinal Infections: Higijena (Belgrade), 6: 287-295, 1954)

\* \* \* \* \*

Studies of Waterborne Outbreak of Amebiasis, South Bend,  
Indiana. III. Investigation of Family Contacts

Following a small outbreak of amebiasis in a factory, resulting from sewage contamination of a water supply in South Bend, Ind., (Am. J. Hyg., 1955, v. 52, 777), the incidence of infection among the employees and their family contacts was investigated in order to determine the importance of intrafamilial transmission and of the family food-handler as a source of infection. Among 1542 employees, 52.4% were infected, compared with 4.4%



in a neighboring plant. One-third of the employees were asked to collect specimens of feces from their spouse and other members of the family, excluding those families in which more than one member was employed at the plant. The specimens were preserved and examined later by concentration methods. Since relatively few Entamoeba histolytica infections were found, a combined amebic prevalence rate of E. histolytica, E. coli, or Endolimax nana was used in analysing the results, any person infected with one or more of these being counted as a single positive. This was believed to give a good index of transmission.

Specimens were obtained from 600 family contacts of 334 employees, representing 50% of the total number of contacts in the families. The results are shown in a series of tables. No helminth infections were found, but 25.2% harbored one or more intestinal protozoa, 3.7% being infected with E. histolytica. Higher rates, though not significantly so, were found among the contacts of positive employees as compared with negative employees in rural compared with urban areas and in families with privies compared with those having flush latrines. There was no difference in infection rate between persons who were served by infected food-handlers and those who were not. The amebic prevalence rate in contacts reached a peak in the age-group 20-30, and in females the rate fell after the age of 40, while in males it continued to rise. Smaller families showed a higher rate than larger families, but this may have been affected by the fact that they contained more adults.

This study tends to minimize the importance in a good home environment of intrafamilial transmission and of infection in food-handlers. In view of these findings, serious consideration must be given to other means of transmission in urban communities. It is suggested that water-borne infection may be more frequent than is suspected. (Brooke, M.M., et al., Studies of a Water-Borne Outbreak of Amebiasis, South Bend, Ind., III. Investigation of Family Contacts: Amer. J. Hyg., 62: 214-226, November 1955) (Abstracted by T.H. Davey in Trop. Dis. Bul., 53: 590-591, May 1956)

\* \* \* \* \*

#### Chapter 26, Manual of the Medical Department - Health Program for Civil Service Employees

The above proposed new chapter has been cleared through various Bureau of Medicine and Surgery codes and is now being circulated for comments and recommendations through the various naval bureaus and offices. It should be on its way to field activities before long.

\* \* \* \* \*

Bureau of Medicine and Surgery Instruction  
on Uniform Civilian Medical Jackets

This instruction should be released at an early date. It is the result of a recommendation made by the Navy Inspector General's Office.

\* \* \* \* \*

The printing of this publication has been approved by the Director of the Bureau of the Budget, 16 May 1955.

\* \* \* \* \*

Permit No. 1048

OFFICIAL BUSINESS

WASHINGTON 25, D. C.

DEPARTMENT OF THE NAVY  
BUREAU OF MEDICINE AND SURGERY

PENALTY FOR PRIVATE USE TO AVOID  
PAYMENT OF POSTAGE, \$300